BIOS

Alberta Society of Professional Biologists • Winter 2009 Volume 24 • Number 4

ASPB 2010 Conference Announcement

April 14 and 15, 2010, the Alberta Society of Professional Biologists (ASPB) presents the 2010 Conference and Annual General Meeting at the Calgary Zoo in Calgary, Alberta.

This year's theme is entitled:

"Innovations and Advancements in Biology"

Registration information and full details are available at www.aspb.ab.ca

ASPB 2010 Conference Logo Design Contest

WIN PRIZES!!!!

OBJECTIVE: The 2010 ASPB Conference Committee is inviting all ASPB members to submit a logo for our 2010 conference.

GUIDELINES: The logo needs to be original and represent the conference theme. You should include the title of the conference and the text "Alberta Society of Professional Biologists' 2010 Conference". Otherwise, be creative and have fun.

SUBMISSION DEADLINE: Logos need to be submitted by 10:00 pm on January 22, 2009. Your logo can be submitted to pbiol@aspb.ab.ca

PRIZE: One stainless steel thermos with the ASPB logo on it, one reusable shopping bag with the 2010 ASPB conference logo on it and some fame.

RULES: The logo must be an original idea and cannot infringe on any copyrights. The logo will become the property of the ASPB.

Any questions or comments may be directed to:
christel.leonhardt@stantec.com

More Conference news on Page 2…

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BIOS is published for the enjoyment and benefit of the members of the Alberta Society of Professional Biologists and those interested in the field of professional biology. Articles or comments are welcomed and should be sent to the editor, Linda Zimmerling at lindazim@shaw.ca.

ASPB 2010 Conference Call for Papers and Posters

The objective of the conference is to better understand recent innovations and advancements in the practice of biology. Advancements are being made in academia, consulting and regulation across all market sectors. These advancements improve our understanding of the natural environment, methods for assessing the environment, and ways of reporting. We invite you to share your successes and challenges, facilitate new ideas, contribute to discussion and debate the issues. The conference will include presentations on a variety of topics as well as a poster display that will be up for the duration of the conference. Posters will require presenter presence during a poster session during the conference.

This call is for both papers and posters. Details for presentations and posters will be provided to successful submissions. Potential presentations may include (but are not limited to) innovations and advancements in:

- Environmental Assessment approval process,
- Environmental Assessment reporting,
- Field methodology in aquatic systems,
- Field methodology in terrestrial systems,
- Meeting current and future regulatory approvals,
- Monitoring Programs,
- Reclamation, and
- Technology and instrumentation.

The 2010 ASPB Conference Committee invites you to submit an abstract for review. Target audiences include (but are not limited to) consultants, government, industry, first nations, environment advocates and academia. Presenters will receive 50% off their conference registration. Poster presentations will pay full registration price. The cost for preparing the proposal and attending the conference will be at the applicant's expense.

An abstract should follow the format outlined on the ASPB website www.aspb.ab.ca and be submitted electronically to pbiol@aspb.ab.ca by January 29, 2010 for review.

ASPB Volunteer Opportunities

The ASPB 2010 Conference Committee needs your help to make the ASPB 2010 Conference a success. Please email lindazim@shaw.ca to get involved.

Continuing Competency Committee: The Board of Directors is looking for members to join the Continuing Competency Committee. This ad-hoc committee will be responsible for the following:

- reviewing and updating the Continuing Competency Program (CCP)
- testing the audit protocol and member's volunteer compliance with the program
- to create awareness and acceptance of the CCP
- liaison with the Discipline Committee

Please contact Carol Engstrom Carol.Engstrom@huskyenergy.com if you are interested.

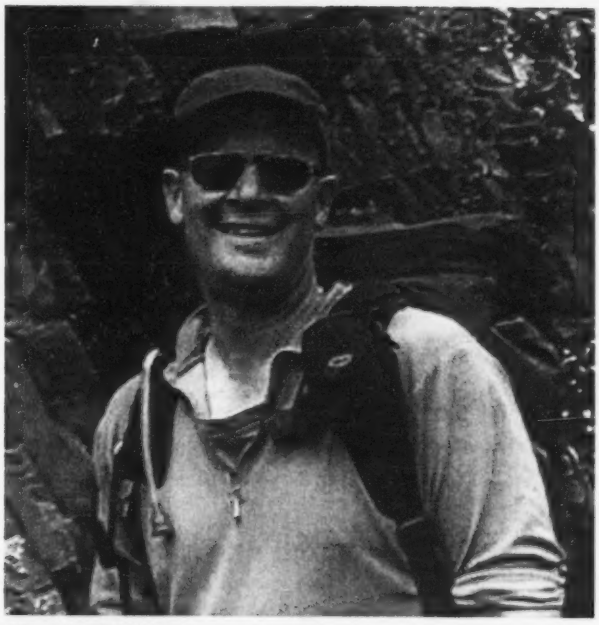
Positions are available for the following committees:

i. Discipline
ii. Practice Review
iii. Communications
iv. Calgary and Edmonton Professional Development

Contact pbiol@aspb.ab.ca to get involved.

Interview with a Biologist: Terry Antoniuk, P. Biol.

by Ngaio Hotte, P. Biol.



About the Biologist

Terry Antoniuk always knew he wanted to be a biologist. His love of the outdoors motivated him to pursue a career in biology when the field offered few career opportunities outside government. With four summers' worth of work experience with government and academia, and a degree in Zoology under his belt, Terry got his first full-time job as an aquatic ecologist with Gulf Oil in 1978. His 30 year career has been divided between industry, and for the past 17 years, private consulting.

Though he has been based in Calgary, much of Terry's work has been in the western Arctic, in Yukon and Northwest Territories, although he has also spent much time in British Columbia, and has also worked on projects across Canada. He feels fortunate that his projects have enabled him to see remote regions of Canada that he would not have otherwise seen. He has transitioned from his role as an aquatic specialist to become one of Alberta's most respected landscape ecologists. Terry applies his knowledge of ecological principles to manage cumulative and project-specific effects at a variety of scales, ranging from local to landscape level. Over the course of the past eight years, Terry has worked to develop landscape indicators and thresholds that can be applied to manage cumulative effects. He currently works with the Alberta Landscape Cumulative Effects Simulator (ALCES) group to model and forecast cumulative environmental effects of development. His work with the group has been particularly valuable to development planning under Alberta's Land Use Framework.

Terry enjoys the flexibility offered by running his own private consulting firm, Salmo Consulting Inc. Like many biologists, Terry works long hours on projects, but managing his own small business grants him the freedom to take time off, travel, and enjoy time with his family. One of Terry's favourite recent projects involved leading a team of independent specialists to collaborate on a boreal caribou recovery plan for northeast Alberta. The team's work highlighted the challenges and trade-offs associated with development in the region, and revealed that win-win outcomes are not always achievable. Over the course of his career, he has enjoyed the opportunity to work with a number of specialists on interdisciplinary projects and engage with communities to integrate traditional ecological knowledge with western science.

Changes in the Field of Biology

It's difficult to imagine now, but when Terry began his career, there were far fewer industry and consulting positions for biologists. Biologists were regarded as a strange lot and treated with suspicion because awareness of environmental impacts were not what they are today. Along with changes to society's environmental ethic and an increasing value for environmental protection, Terry has seen the profession evolve into an exciting career choice with considerable opportunities for advancement and autonomy.

In order for the profile of biologists to grow, Terry would like to see the P. Biol.. designation become a requirement for government, industry and consulting jobs. Another hope he holds is that biologists will increase incorporation of landscape-level considerations into research and communication in order to help the public and project managers to make more informed decisions.

During his career, Terry has seen the pendulum swing from individual project planning towards regional planning, and back again. He believes that the focus is currently shifting back towards regional land use planning and cumulative effects management, and hopes that momentum maintains the current pace of progress in these areas.

Terry also sees significant opportunities for translation of society's environmental ethic into daily activities. Until environmental protection and conservation are recognized as contributing to our quality of life, biologists will continue to face challenges regarding professional recognition and respect. Terry is pleased with the significant gains that have been made in terms of dialogue about environmental impacts in recent decades, but feels that biologists still have work ahead of them in terms of reframing the debate to connect environmental health with quality of life and communicating the concept of environmental and resource limits.

Words of Wisdom for New Biologists

"Be patient; neither research nor societal change occurs overnight. It is important to have a long-term outlook and not become discouraged. It is also important to understand that human dimensions are critical to resource management, so listening and communication skills are critical." Terry notes that respected biologists who have experienced success of their initiatives and who have made the greatest contributions to their fields of study have had long-term goals, excellent communication and listening skills, and have worked diligently towards their achievements.

Robin Leech Receives Awards of Appreciation

In Edmonton on 27 November and in Calgary on 2 December, Robin received Awards of Appreciation from ASPB members.

Dave Ealey, P. Biol., presents Robin Leech, P. Biol., with Appreciation Award at ASPB Edmonton Zoo social event.
Photo Credit: Gerry Haekel, P. Biol.

Under-glass framed picture received by Robin Leech, P. Biol. in Edmonton.

Carol Engstrom, P. Biol., presents Robin Leech, P. Biol, with plaque at Calgary Zoo scoial event.

Dr. David Hik and Faye Wyatt at ASPB Edmonton Zoo social event.
Photo Credit: Gerry Haekel, P. Biol

The Edmonton Award was an under-glass framed picture, with text, of an *Amblypygid Arachnid*, published in 1799, which now hangs in the hallway of his home.

The Calgary Award was a carved plaque done in black walnut which reads:

ASPB
Dr. Robin Leech, P. Biol.
Award of Appreciation
In recognition of significant contributions and dedicated service to the Alberta Society of Professional Biologists as Executive Director and valued volunteer. Presented: December 2, 2009

Your Friendly Neighbourhood Spiderman Strikes Again

by Robin Leech, P. Biol.

One of the really fun things in life for me is when young children are exposed to the delights of discovery, as they realize that they are holding a real, live tarantula. There is an exquisite rapture on children's faces as they hold in their wee hands a tarantula so large that the spider has to bend its legs in order to keep its legs on their hands.

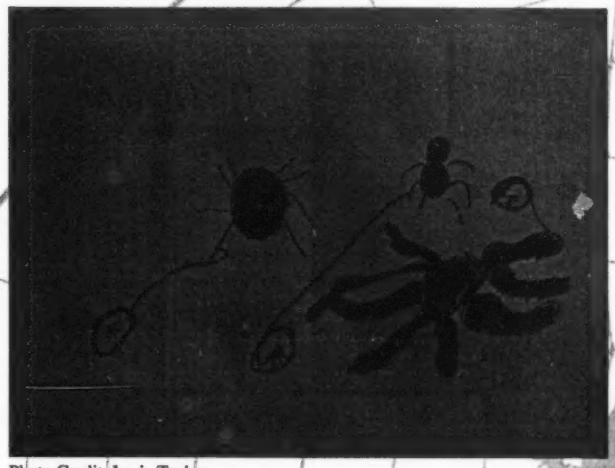


Photo Credit: Lorie Taylor

Since spring 1978, I have been going to schools in Edmonton and area. The very first school was in St Albert at Robert Rundle School. Since then visits have taken me to Entwistle, Morinville, Calmar, Warburg, Beaumont, Leduc, Tomahawk, Spruce Grove, Stony Plain and other centres.

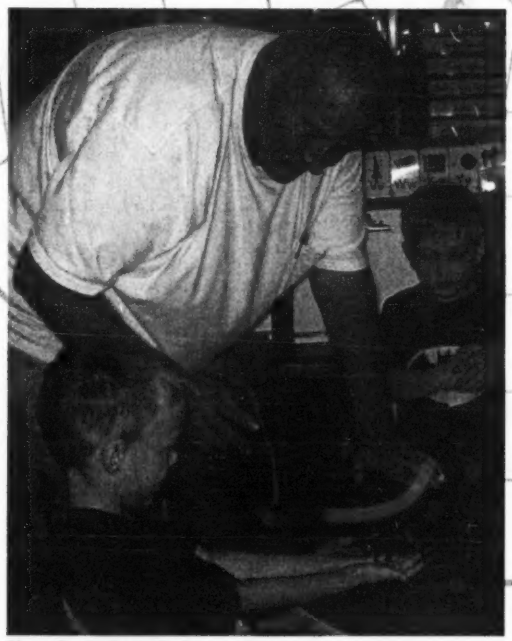


Photo Credit: Lorie Taylor

I have been returning to many of these schools for almost 30 years. I "do" all grades from 12 down to kindergarten. Over the years I have been rewarded by students in these classes again and again when, years later I meet them, some when I was an instructor at NAIT, and some at universities, and some at professional meetings such as the Entomological Society of Alberta.

In the last half of October this year, Lorie and I visited three schools for spider talks: Robert Rundle School, Ronald Harvey School in St Albert, and Crestwood School in Edmonton. On the 16th of October, we were called to Nellie McClung Girls' Junior High School Program as expert advisors to help the girls with their Edmonton Regional Science Fair presentations.

Sometimes we receive one drawing of a spider with the students' names printed in all directions. One time we received a massive 2-metre-long picture of spiders drawn by each student with the students' names.

This time we received an impromptu drawing by Shannon in a kindergarten class at Robert Rundle School. One of the pictures I show the students is of a bolas spider with its bolas. I explain how the spider swings the bolas round and round till it lands on a flying insect, then the spider reels in the prey just as a fisherman reels in a fish. Shannon's picture shows three bolas spiders swinging their bolases.

I may not see these kids again for 4-5 years, but they will remember both me and the spider.

Spiderman Marvels at the Web: Professionalism and Problem Solving

by Robin Leech, P. Biol.

The Listserver Taxacom is a wonderful source of information and discussion. I have belonged to Tacaxom ever since I have had access to the Internet back in the 80s. A recent situation came up that I feel many ASPBers might read about and enjoy. It goes like this:

Tuesday, 1 December 2009 at 3:43 p.m., Stephen Thorpe, my botanist friend in Auckland, NZ, sent a message on Taxacom asking, "Can anybody shed light on a mysterious fish taxonomist called 'Aarn'...". The article was on fishes from Australia.

Tuesday, 1 December 2009 at 4:30 p.m., I sent a message to Joe Nelson and Gary Ash, "Does either of you know who the fish taxonomist called 'Aarn' is?"

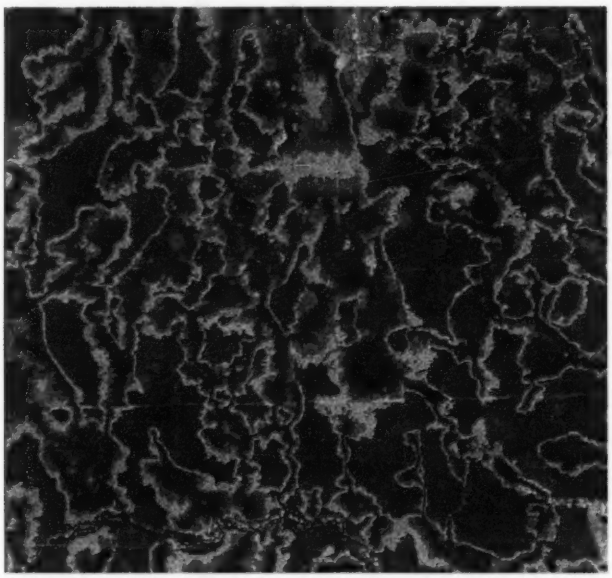
On 1 December 2009 at 5:14 p.m., Joe Nelson, author of Fishes of the World, emeritus professor at the U of A, replied, "Yes, he is an Australian ichthyologist – often publishing with Walter Ivantsoff, also of Australia. Aarn is an Australian aboriginal name – Just one name! His refs come first in my Fishes of the World. Joe."

As soon as I received Joe Nelson's reply, I sent a message to Stephen Thorpe! When I stop to think about it for a moment, it was a request from down under, on the other side of the world, that was answered in about 90 minutes. The solution involved a botanist, a spiderologist and an ichthyologist. It doesn't get any better than that.

Alberta's New Wet-Areas Mapping Initiative

by Kristen Foreman, B.I.T.

On December 8, 2009 the Government of Alberta co-hosted an information session in Edmonton about their new Wet-Areas Map (WAM). The WAM is derived using a GIS process from digital elevation models (DEMs) derived from LiDAR (light distance and ranging). In Alberta, the WAM has been able to predict previously unmapped wet areas and small non-permanent and permanent streams with up to 95% confidence. This new mapping initiative is proving to have a myriad of applications for government, industry, and stewardship groups.



Government of Alberta image: Region of Peace River representative of the typical flat boreal forest. The green areas are raised peat bogs. The dark blue are stream networks where water is at the surface. Lighter shades of blue show where water is near the surface and sensitive to disturbance.

Since 2004, Alberta has been working closely with researchers at the University of New Brunswick to develop a tool to predict the location of wet areas along the hydrologically-important eastern slopes and western boreal forest. Similar maps had been previously created for New Brunswick and Nova Scotia, and researchers were able to build upon the lessons learned creating wet area maps for these provinces. Alberta's mapping process is incorporating newly acquired LiDAR data to produce maps of superior quality and resolution. Approximately 17 million hectares are to be mapped to 1 m resolution using LiDAR data. The process has been field tested and it was found that the predicted location of wet areas was within 4 m of the handheld GPS location, 9 times out of 10. In addition to accurately predicting the location of previously unmapped streams and ponds, the WAM offers a cartographic depth-to-water (DTW) index. In a general sense, this DTW is predicted by interpolating the connection between surface water features and measuring the distance between this water surface and the soil surface above. Wetland boundaries have been found to generally conform to the 50 cm DTW contour of the WAM, with greater accuracy than air-photo interpretation.

Many sectors are already reaping the benefits provided by WAM. The Government of Alberta originally created this tool to assist its management strategy initiatives and to protect the hydrology of areas susceptible to the Mountain Pine Beetle. Alberta Tourism, Parks, and Recreation (ATPR) is beginning to use WAM to plan the location of new trails and campgrounds, model the potential distribution pathways of invasive species, and prioritize park boundary modifications. Alberta Sustainable Resource and Development (ASRD) is using WAM to optimize off highway vehicle trail placement on public lands, and have experienced some initial success in the Ghost Forest Land Use Zone. The WAM has been used by the forest industry to plan road routes and culvert placement, avoid wet areas when designing harvest layout, focus rare plant searches, and predict possible unique habitats for protected species. Several forestry representatives commented that they are saving time and money with the "surprise-free planning" offered with WAM

.

There is university research being conducted currently to explore if there are correlations between DTW and the vegetation composition mapped with the Alberta Vegetation Index (AVI); biodiversity; and contamination pathways just to name a few. One University of New Brunswick student is developing a tool to optimize road placement based on WAM and user priorities. This tool also offers to assist in prioritizing culvert rehabilitation projects along existing roads. This list barely scratches the surface of potential applications of WAM.

Currently in Alberta, 3 million hectares have undergone wet-area mapping and it is projected that 6 million hectares will have complete WAMs by March 2010. The Government of Alberta hopes to be able to offer all 17 million hectares of WAM by winter 2012.

For further information about WAM, contact Barry White, R.P.F., of Sustainable Resource and Development at barry.white@gov.ab.ca

See: http://www.sfmnetwork.ca/html/ab_wam_2009_e.html

ARTICLES WANTED

We are always looking for articles to put in the BIOS Newsletter. If you have a story or an issue you would like to share with your fellow professionals, please submit it to lindazim@shaw.ca.
You could win a prize!

2009 BIOS Contribution Prize Winners

Melissa Moss, P. Biol. and J. T. Witiw, RPFT

Articles and Links Worth Sharing

From Gerry Haekel, P. Biol.

The Alberta Learning Information Service recently published its 2009 Alberta Wage and Salary data for 400 plus occupations including Biologists. The information can be found at the following link: http://alis.alberta.ca/wageinfo/Content/RequestAction.asp?aspAction=GetWageDetail&format=html&RegionID=20&NOC=2121

From Laurie Hamilton, P. Biol.

Province seeks input on proposed changes to Kananaskis area park http://alberta.ca/home/NewsFrame.cfm?ReleaseID=/acn/200912/2745755BEA7EA-075F-9CC4-60362AACA0B49958.html

From Ngaio Hotte, P. Biol.

Check out this Globe and Mail article "British bird's rapid evolution signals human impact" at http://www.theglobeandmail.com/news/technology/science/british-birds-rapid-evolution-signals-human-impact/article1387804/?service=email

From Robin Leech, P. Biol.

1. ABMI Core Report looks at the health of biodiversity in the Al-Pac Forest Management Agreement area

The findings in this report serve as a benchmark for the environmental health of an area that comprises nine per cent of Alberta's land base and eight per cent of Canada's Boreal Plains Ecosystem. The report, which details the status of various species and habitats throughout the Al-Pac FMA, states that the region's species are 96 per cent intact and the region's habitats are 97 per cent intact. Approximately seven per cent of the landscape in the area has been altered by human activities, primarily forestry and energy operations. "The information contained in this report provides us with a picture in time of biodiversity in our FMA," says Al Ward, president and chief operating officer for Al-Pac. "We are committed to monitoring biodiversity through collaboration with ABMI to identify and understand any changes, develop options to mitigate them, and monitor the outcomes."

For more information and Supplementary Reports go to www.abmi.ca

2. U.S. Airline Industry Not So Green

There are calls in the U.S. for the airline industry to take recycling seriously. If you have flown in the U.S. or in Canada you may have noticed that when the flight attendants come around to collect passenger garbage, all the empty cans, cups, bottles, newspapers, paper plates, napkins, etc., usually end up in the same garbage bag.

The U.S. airline industry alone discards enough aluminum cans every year to build more than 57 Boeing 747s, and enough paper to fill a football field-sized hole 70 metres deep. That is, 4,250 tonsof aluminum and 72,250 tons of paper.

Source: Farley, D. 2009. The Not So Green Skies. Scientific American, Special Issue: Understanding Origins. September 2009: 21-22. www.ScientificAmerican.com

3. Province Warned Against Water Sale. The subtitle reads: "Alberta's privatized marketing plan a mistake, conservationists say."
Note that Australia in 1994 sold water rights, and now wants to buy them back. The Aussie Government told the rice, wine and cotton conglomerates they now owned the water they were using. Soon, water rights concentrated in the hands of a few companies.

And the second to last paragraph: "But Alberta is the province with the least fresh water in Canada and with the most critical supply issues looming in the future."

Source: November 24, 2009 Edmonton Journal, page B3, top of page, article titled, Province warned against water sale by Hanneka Brooymans.

4. Cometary Mammal Wipeout in North America 12,900 Years Ago

Roughly 12,900 years ago there was a global cooling anomaly that contributed to the extinction of 35 species of mammals, including the mammoth. Average temperatures in some areas may have dropped 15°C. New evidence in the form of small diamonds, several nanometers wide, has been found that supports a theory proposed last year that a comet collision, or a similar explosive event, threw up dust-like debris to cause the cooling.

Nanodiamonds occur only in sediments exposed to high temperatures and pressures, such as those that occur when there is a cometary impact. There have been six of these nanodiamond sites found in North America: Arizona, Oklahoma, Michigan, South Carolina, Manitoba and Alberta. Similar finds in sediments in Europe, Asia and South America of the same age confirm that the event had global reaches. The event was not as large as the 65-million-years-ago event that wiped out the dinosaurs.
Source: David Biello. March 2009. Scientific American. P.24.

5. Food For Thought and Interplanetary Travel

There has been some very careful study done on what foods astronauts would need for interplanetary travel. They most likely will have to carry small ecosystems to supply food and oxygen.

All previous studies point to major down sides to poultry, fish, snails, newts and sea urchin larvae. Chickens require lots of food and space, and aquatic life is sensitive to water conditions and may be hard to maintain.

Chinese scientists are proposing silkworms, as they are already eaten in parts of China. These insects breed quickly, require little space, food or water, and produce only minute amounts of excrement. The excrement could serve as fertilizer for onboard plants.

Silkworm pupae, which are mostly edible protein, contain twice as much essential amino acids as does pork, and four times as much as do eggs and milk. The 24 December 08 issue of Advances in Space Research, points out that chemical processes could even make the silk digestible.

Source: Choi, CQ. March 2009. Silkworms: what the Astronauts Eat? Scientific American. P.23

6. Earthworms Bad, You Say?

Probably for most of your lives you have heard that earthworms are beneficial, that they aerate the soil, are good for fishing, and so on. There is now a heap of evidence showing that they are the scourge of the hardwood forest in northeastern North America. When the Wisconsinan Glaciers came, they removed precinctive earthworms, and ever since, the hardwood forests have evolved without earthworms.

But, earthworms are back. They are wreaking havoc in forests with the maple, basswood, red oak, poplar or birch species. According to Peter Groffman, a microbial ecologist at the Cary Institute of Ecosystem Studies in Millbrook, NY, northern hardwood forests have relied on thick layers of leaf litter to serve as a rooting medium. Groffman reports that "the earthworms come into an area with a thick organic mat, and in two to five years that layer is gone."

Some northern hardwood forests that once had a lush understory now have but a single species of herb, and virtually no tree seedlings. Evidently, earthworms change the forest soils from a fungal- to a bacterial-dominated system, which speeds up the conversion of leaf detritus to mineral compounds and thereby potentially robs the plants of organic nutrients.

There are about 5,000 species of earthworms, but only about 16 of the European and Asian varieties do the real damage. Two of these baddies are *Lumbricus terrestris,* known as the night crawler, and which we all know from Invertebrate Zoology labs, and *Amynthas agrestis* known as the Alabama jumper, snake worm, or crazy worm. The snake worm is an aggressive Asian worm that lives in high densities and which can literally jump out of a bait can. It is a voracious eater, and does the most harm to the soil.

Source: Tennesen M. March 2009. Crawling to Oblivion: invasive earthworms denude Great Lakes forests. Scientific American. P.22.

News and Upcoming Events

January 31, 2010 ASPB Online Membership Renewal deadline

Your 2010 Membership Renewal can now be made on the ASPB Website. As with 2009, Membership dues will only be accepted online. **Therefore no cheques or money orders will be accepted.** The deadline for 2010 Membership dues is January 31st.

To renew your membership simply go to the ASPB website at www.aspb.ab.ca, click on the "Store" tab. The ASPB Membership Fee Payment page will appear and you just need to enter your ASPB Membership number and follow the prompts.

If you cannot find your membership number call the ASPB Office at 780-434-5765 and Shauna or Sandra will provide you with your membership number. You can also email Shauna at shauna@managewise.ca and she will provide you with your number within 48 hours.

February 2-4, 2010 Canadian Environmental Assessment Agency Courses – Edmonton

Orientation to the Canadian Environmental Assessment Act - February 2, 2010
Cost $199.00 General Public (Government, Industry, Authorities, etc.)
$99.00 Aboriginal Persons, ENGO, Student (limit of four participants from these groups per session at the reduced price)

Screenings under the Canadian Environmental Assessment Act Edmonton, February 3-4, 2010
Cost $675.00 General Public (Government, Industry, Authorities, etc.)
$338.00 Aboriginal Persons, ENGO, Student (limit of four participants from these groups per session at the reduced price)

For more information check out the web site http://www.ceaa.gc.ca/014/index-eng.aspx

April 14 and 15, 2010 ASPB 2010 Conference and Annual General Meeting, Calgary, AB
www.aspb.ab.ca

June 22-25, 2010 Air & Waste Management Association's 103rd Annual Conference & Exhibition

Calgary, AB ACE 2010 will provide a forum for balanced discussion on a broad range of topics from highly technical environmental issues to broad social, economic, and environmental public policy debates. The theme of ACE 2010 is Energy and Environment, an appropriate theme for a conference being held in the heart of Canada's energy resources sector, and yet home to some of the most stunning and pristine environments in the world.

Visit www.awma.org/ACE2010/ for more information.

June 29 – July 2, 2010 The 6th International Conference on the Biology of Butterflies

To be held at the University of Alberta, Edmonton, Canada. This meeting has been held at irregular intervals since 1981 and recognizes the role that the study of butterflies has played in our understanding of both evolutionary biology and ecology. The meeting will include Symposia, Contributed Papers, Posters, Banquet and Field Trips.

For those wishing to attend this meeting, and anyone wishing to present a Contributed Paper or a Poster, please view the Conference webpage at: http://www.biology.ualberta.ca/biobutterfly2010
Deadline for lower-cost Registration: March 31, 2010
Deadline for Abstract submission: May 17, 2010

July 3-7, 2010, 24th International Congress for Conservation Biology, Edmonton, AB

Conservation for a Changing Planet (ICCB 2010).

Visit www.conbio.org/2010 for more information